ZooKeys 573: 367–386 (2016)
doi: 10.3897/zookeys.573.7444
http://zookeys.pensoft.net

RESEARCH ARTICLE

A peer-reviewed open-access journal
ZooKeys
Launched to accelerate biodiversity research

New Curculionoidea records from New Brunswick, Canada with an addition to the fauna of Nova Scotia

Reginald P. Webster[1], Robert S. Anderson[2], Vincent L. Webster[3], Chantelle A. Alderson[3], Cory C. Hughes[3], Jon D. Sweeney[3]

1 *24 Mill Stream Drive, Charters Settlement, NB, Canada E3C 1X1* **2** *Research Division, Canadian Museum of Nature, P.O. Box 3443, Station D, Ottawa, ON, Canada K1P 6P4* **3** *Natural Resources Canada, Canadian Forest Service - Atlantic Forestry Centre, 1350 Regent St., P.O. Box 4000, Fredericton, NB, Canada E3B 5P7*

Corresponding author: *Reginald P. Webster* (reginaldwebster@rogers.com)

Academic editor: *J. Klimaszewski* | Received 7 December 2015 | Accepted 11 January 2016 | Published 24 March 2016

http://zoobank.org/EF058E9C-E462-499A-B2C1-2EC244BFA95E

Citation: Webster RP, Anderson RS, Webster VL, Alderson CA, Hughes CC, Sweeney JD (2016) New Curculionoidea records from New Brunswick, Canada with an addition to the fauna of Nova Scotia. In: Webster RP, Bouchard P, Klimaszewski J (Eds) The Coleoptera of New Brunswick and Canada: Providing baseline biodiversity and natural history data. ZooKeys 573: 367–386. doi: 10.3897/zookeys.573.7444

Abstract

This paper presents 27 new records of Curculionoidea for the province of New Brunswick, Canada, including three species new to Canada, and 12 adventive species, as follows: *Eusphryrus walshii* LeConte, *Choragus harrisii* LeConte (newly recorded for Canada), *Choragus zimmermanni* LeConte (newly recorded for Canada) (Anthribidae); *Cimberis pallipennis* (Blatchley) (Nemonychidae); *Nanophyes m. marmoratus* (Goeze) (Brentidae); *Procas lecontei* Bedel (Brachyceridae); *Anthonomus pusillus* LeConte (newly recorded for Canada), *Anthonomus* (*Cnemocyllus*) *pictus* Blatchley, *Archarius salicivorus* (Paykull), *Dorytomus hirtus* LeConte, *Ellescus bipunctatus* (Linnaeus), *Mecinus janthinus* (Germar), *Myrmex chevrolatii* (Horn), *Madarellus undulatus* (Say), *Microplontus campestris* (Gyllenhal), *Pelenomus waltoni* (Boheman), *Rhinoncus bruchoides* (Herbst), *Rhinoncus perpendicularis* (Reich), *Cossonus impressifrons* Boheman, *Cossonus pacificus* Van Dyke, *Rhyncolus knowltoni* (Thatcher), *Eubulus bisignatus* (Say), *Polydrusus cervinus* (Linnaeus), *Magdalis piceae* Buchanan, *Procryphalus mucronatus* (LeConte), *Ips grandicollis* (Eichhoff), and *Xyleborinus attenuatus* (Blandford). Recent name changes in the genus *Rhinoncus* are applied to species known from New Brunswick. In addition, *Orchestes alni* (Linnaeus) is newly recorded from Nova Scotia.

Keywords

Anthribidae, Nemonychidae, Brentidae, Brachyceridae, Curculionidae, new records, Canada, New Brunswick, Nova Scotia

Copyright *Her Majesty the Queen in Right of Canada.* This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Introduction

The Curculionidae of New Brunswick were first reviewed by Majka et al. (2007), adding 77 species to the faunal list of the province. Later, Webster et al. (2012) newly recorded three species of Anthribidae, four Brentidae, three Dryophthoridae, three Brachyceridae, and 50 species of Curculionidae. Shortly after this, another four species of Anthribidae, one Brentidae and 11 species of Curculionidae were added to the faunal list of New Brunswick by Douglas et al. (2013). Cognato et al. (2015) reported the occurrence of *Dryocoetes krivi-olutzkajae* Mandelshtam in New Brunswick. It is unclear whether this is an introduction from Russia or a Holarctic species (Cognato et al. 2015). Since 2013, 27 additional species of Curculioniodea from the families Anthribidae, Nemonychidae, Brentidae, Brachyceridae, and Curculionidae have been documented for New Brunswick, including three species new to Canada. Twelve of these are adventive species. One species is also newly reported from Nova Scotia. The purpose of this paper is to report on these new records.

Methods and conventions

Collection methods. Specimens were collected by sweeping vegetation in various habitats and from Lindgren 12-funnel trap samples during a study to develop improved tools for the detection of invasive species of Cerambycidae. These traps are visually similar to tree trunks and are often effective for sampling species of Coleoptera that live in microhabitats associated with standing trees (Lindgren 1983). In many sites, equal numbers of traps were deployed in the canopy and 1 m high under trees. See Webster et al. (2012) and Hughes et al. (2014) for details of the methods used to deploy Lindgren traps and for sample collection.

A description of the habitat was recorded for all specimens collected during this survey. Locality and habitat data are presented as on labels for each record. Two labels were used on many specimens, one that included the locality, collection date, and collector, and one with macro- and microhabitat data and collection method. Information from the two labels is separated by a // in the data presented from each specimen.

Distribution. Every species is cited with current distribution in Canada and Alaska, using abbreviations for the state, provinces, and territories. New records for New Brunswick are indicated in **bold** under **Distribution in Canada and Alaska**. The following abbreviations are used in the text:

AK	Alaska	**MB**	Manitoba
YT	Yukon Territory	**ON**	Ontario
NT	Northwest Territories	**QC**	Quebec
NU	Nunavut	**NB**	New Brunswick
BC	British Columbia	**PE**	Prince Edward Island
AB	Alberta	**NS**	Nova Scotia
SK	Saskatchewan	**NF & LB**	Newfoundland and Labrador*

*Newfoundland and Labrador are each treated separately under the current Distribution in Canada and Alaska.

USA state abbreviations follow those of the US Postal Service. Acronyms of collections examined or where specimens reside referred to in this study are as follows:

AFC	Atlantic Forestry Centre, Fredericton, New Brunswick, Canada
CMNC	Canadian Museum of Nature, Ottawa, Ontario, Canada
NBM	New Brunswick Museum, Saint John, New Brunswick, Canada
RWC	Reginald P. Webster Collection, Charters Settlement, New Brunswick, Canada

Results

We newly report on 28 species of Curculionoidea, including three new Canadian records, in the families Anthribidae (3), Nemonychidae (1), Brentidae (1), Brachyceridae (1), and Curculionidae (22), including one species of Curculionidae new to Nova Scotia. Twenty-four of the 28 species reported in this study were captured in Lindgren 12-funnel traps; 18 were collected only in these traps. Four species were collected by sweeping foliage, and one was found under bark.

Species accounts

Species with a † are adventive to Canada. The determination that a species was a new record is based on information in the print version of Bousquet et al. (2013). The classification used below follows Bouchard et al. (2011).

Family Anthribidae Billberg, 1820
Subfamily Anthribinae Billberg, 1820
Tribe Zygaenodini Lacordaire, 1865

***Eusphyrus walshii* LeConte, 1876**

Material examined. New Brunswick, York Co., Fredericton, Odell Park, 45.9439°N, 66.6666°W, 24.VI-9.VII.2013, 7-19.VIII.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel traps in canopy (2, RWC); same locality, forest type, and collection method but 19.VIII-5.IX.2013 (1, RWC); same locality and forest type but 45.9508°N, 66.6723°W, 14-28.VII.2015, 10-25.VIII.2015, 25.VIII-9.IX.2015, C. Alderson & V. Webster // Lindgren funnel traps in canopy (2 AFC; 5, RWC); Keswick Ridge, 45.9962°N, 66.8781°W, 3-18.VII.2014, 30.VI-16.VII.2015, 16-29.VII.2015, C. Alderson & V. Webster // Mixed forest, Lindgren (black) funnel trap in canopy (1), purple Lindgren funnel traps 1 m high (3), black Lindgren funnel trap 1 m high (1) (2, AFC; 3, RWC).

Distribution in Canada and Alaska. ON, QC, **NB** (Bousquet et al. 2013).

Comments. All specimens of this species were captured in Lindgren funnel traps in hardwood and mixed forests. Eleven of the 15 individuals were captured in the canopy of trees.

Subfamily Choraginae Kirby, 1819
Tribe Choragini Kirby, 1819

***Choragus harrisii* LeConte, 1878**

Material examined. New Brunswick, Restigouche Co., Jacquet River Gorge P.N.A. (Protected Natural Area), 47.8257°N, 66.0764°W, 22.VII-5.VIII.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps in canopy of *P. balsamifera* (2, RWC).

Distribution in Canada and Alaska. NB (New Canadian record). This is the first record of *Choragus harrisii* LeConte for Canada. In the USA, it has been reported from MA west to MI and OK (Valentine 1998).

***Choragus zimmermanni* LeConte, 1878**

Material examined. New Brunswick, Queens Co., C.F.B. Gagetown, 45.7516°N, 66.1866°W, 17-30.VII.2015, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel trap 1 m high under trees (1, RWC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 13-27.VIII.2015, C. Alderson & V. Webster // Mixed forest, Lindgren funnel trap 1 m high (1, CMNC).

Distribution in Canada and Alaska. NB (New Canadian record). This is the first record of *Choragus zimmermanni* LeConte for Canada. In the USA, it has been reported from MA west to OH and south to FL and TX (Valentine 1998).

Family Nemonychidae Bedel, 1882
Subfamily Cimberidinae Gozis, 1882
Tribe Cimberidini Gozis, 1882

***Cimberis pallipennis* (Blatchley, 1916)**

Material examined. New Brunswick, Gloucester Co., Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 13-28.V.2015, 28.V-15.VI.2015, 15-25.VI.2015, C. Alderson & V. Webster // Mixed forest, green Lindgren funnel traps in canopy of white pine (8, RWC). **Kent Co.**, Kouchibouguac National Park, 46.8072°N, 64.9100°W, 21-27.V.2015, 27.V-12.VI.2015, 12-24.VI.2015, 24.VI-7.VII.2015, C. Alderson & V. Webster // Jack pine forest, Lindgren funnel traps, 1 m high (3, AFC;

2, RWC). **Queens Co.**, C.F.B. Gagetown, 45.7516°N, 66.1866°W, 9-22.V.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel trap in canopy of *Q. rubra* (1, RWC). **York Co.**, 15 km W of Tracy, off Rt. 645, 45.6848°N, 66.8821°W, 1-8.VI.2009, R. Webster & M.-A. Giguère // Red pine forest, Lindgren funnel trap (1, AFC).

Distribution in Canada and Alaska. AB, QC, **NB**, NS (Bousquet et al. 2013).

Comments. All specimens of *Cimberis pallipennis* (Blatchley) from NB were captured in Lindgren funnel traps. Eight individuals were caught in traps in the canopy of white pine, *Pinus strobus* L.; others were captured in traps 1 m high in jack pine (*Pinus banksiana* Lamb.) and red pine (*Pinus resinosa* Ait.) stands.

Family Brentidae Billberg, 1820
Subfamily Nanophyinae Gistel, 1848
Tribe Nanophylini Gistel, 1848

***Nanophyes marmoratus marmoratus* (Goeze, 1777)†**

Material examined. New Brunswick, Queens Co., Grand Lake Meadows P.N.A. at Rt. 105, 45.8461°N, 66.2061°W, 12.VI.2014, 22.VI.2014, R.P. Webster // Old field near flood plain forest, sweeping (4, RWC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 3-18.VI.2015, 18-30.VI.2015, C. Alderson & V. Webster // Hardwood forest, green Lindgren funnel trap in canopy (1), black Lindgren funnel trap 1 m high (1) (2, RWC); Fredericton, Odell Park, 45.9508°N, 66.6723°W, 29.VI-14.VII.2015, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy (1, AFC).

Distribution in Canada and Alaska. MB, ON, QC, **NB** (Bousquet et al. 2013).

Comments. *Nanophyes m. marmoratus* (Goeze) was introduced into North America to control purple loosestrife, *Lythrum salicaria* L. (Anderson 2003).

Family Brachyceridae Billberg, 1820
Subfamily Erirhininae Schönherr, 1825
Tribe Erirhinini Schönherr, 1825

***Procas lecontei* Bedel, 1879**

Material examined. New Brunswick, Queens Co., Grand Lake Meadows P.N.A., 45.8227°N, 66.1209°W, 12.IV-3.VI.2011, M. Roy & V. Webster // Old silver maple forest & seasonally flooded marsh, Lindgren funnel trap (1, RWC).

Distribution in Canada and Alaska. YT, NT, MB, ON, QC, **NB** (Bousquet et al. 2013).

Comments. *Procas lecontei* Bedel is a rarely collected species about which nothing is known of its plant associations or natural history.

Family Curculionidae Latrielle, 1802
Subfamily Curculioninae Latrielle, 1802
Tribe Anthonomini C.G. Thomson, 1859

***Anthonomus* (*Anthonomus*) *pusillus* LeConte, 1876**

Material examined. New Brunswick, Gloucester Co., Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 9-23.VII.2015, C. Alderson & V. Webster // Mixed forest, green Lindgren funnel trap 1 m high (1, RWC).

Distribution in Canada and Alaska. NB (New Canadian record).

Comments. *Anthonomus pusillus* LeConte has been recorded as far north as MA, NY, and NJ in the USA; it is associated with common frostweed, *Crocanthemum canadense* (L.) Britten (Cistaceae) (Blatchley and Leng 1916), which has been recorded from NS and PE but has not yet been found in NB. It is likely that this plant, which lives in dry sandy areas with thin tree cover, will be found in NB. Sandy dune-like areas occur in the vicinty of the site where *A. pusillus* was found. Other members of the Cistaceae (*Hudsonia tomentosa* Nutt., *Lechea maritima* Legget *ex* BSP) have been recorded near this locality (Hinds 2000).

***Anthonomus* (*Cnemocyllus*) *pictus* Blatchley, 1922**

Material examined. New Brunswick, Sunbury Co., Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 9.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (1, RWC).

Distribution in Canada and Alaska. ON, QC, **NB**, NS (Bousquet et al. 2013).

Comments. Specimen labels as "in gall on goldenrod" are the only indications of plant associations for this species (Clark and Burke 2005).

Tribe Curculionini Latreille, 1802
Subtribe Archariina Pelsue & O'Brien, 2011

***Archarius salicivorus* (Paykull, 1792)†**

Material examined. New Brunswick, Sunbury Co., Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 4.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (1, RWC).

Distribution in Canada and Alaska. QC, **NB** (Bousquet et al. 2013).

Comments. This species is associated with galls on *Salix* (Salicaecae) (Anderson 2002).

Tribe Ellescini C.G. Thomson, 1859
Subtribe Dorytomina Bedel, 1886

***Dorytomus hirtus* LeConte, 1876**

Material examined. New Brunswick, Restigouche Co., Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 15-29.V.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps in canopy of *P. balsamifera* (2, AFC; 1, NBM; 11, RWC); ca. 3 km SE of Simpsons Field, 47.5277°N, 66.5142°W, 14-28.V.2015, C. Alderson & V. Webster // Old cedar & spruce forest with *Populus balsamifera* & *P. tremuloides*, Lindgren funnel trap in canopy of *P. balsamifera* (1, AFC).

Distribution in Canada and Alaska. YT, BC, AB, **NB** (Bousquet et al. 2013). These are the first eastern records of *Dorytomus hirtus* LeConte. Previously, this species was known as far east as AB in Canada and IN in the USA (O'Brien 1970, Bousquet et al. 2013). This species will undoubtedly be found in the intervening areas and is likely transcontinental in Canada.

Comments. In the western areas of its range, *D. hirtus* is associated with *Populus fremonti* S. Watson (O'Brien 1970). In NB, this species was captured in Lindgren funnel traps in balsam poplar, *P. balsamifera* L., the probable host in this region. All (15) specimens of *D. hirtus* were captured in Lindgren funnel traps in the canopy of *P. balsamifera*, none in traps in the understory. Adults and larvae of this genus are associated with reproductive structures of various Salicaceae.

Subtribe Ellescina C.G. Thomson, 1859

Comments. Specimens reported by Webster et al. (2012) as *Ellescus ephippiatus* (Say) were misidentified and were *E. bipunctatus* (Linnaeus), a new provincial record. One specimen of *E. ephippiatus* was collected in NB, thus maintaining this species on the provincial list. Adults and larvae of this genus are associated with reproductive structures of various Salicaceae. Species are very poorly defined, and the genus needs revision.

***Ellescus bipunctatus* (Linnaeus, 1758)**

Material examined. New Brunswick, Carleton Co., Meduxnekeag Valley Nature Preserve, 46.1878°N, 67.6705°W, 18.VIII.2008, R.P. Webster // Hardwood forest, sweeping (1, NBM); Meduxnekeag Valley Nature Preserve, 46.1907°N, 67.6740°W, 8-23.V.2012, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of *Populus tremuloides* (2, RWC). **Queens Co.**, Cranberry Lake P.N.A., 46.1125°N, 65.6075°W, 3-13.V.2011, 13-25.V.2011, M. Roy & V. Webster // old red oak forest, Lindgren funnel traps in forest canopy (trap in big toothed aspen) (5, AFC; 2, NBM; 8, RWC); C.F.B. Gagetown, 45.7516°N, 66.1866°W, 9-22.V.2013,

20.V-4.VI.2015, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy (1, AFC; 1 RWC). **Northumberland Co.**, ca. 1.5 km NW of Sevogle, 47.0939°N, 65.8387°W, 1-14.V..2013, C. Alderson & V. Webster // *Populus tremuloides* stand with a few conifers, Lindgren funnel trap in canopy of *P. tremuloides* (1, AFC). **York Co.**, Fredericton, 12.V.1921, 19.V.1921, 10.V.1921, R.P.G. (16, AFC); Fredericton, Odell Park, 45.9539°N, 66.6666°W, 2-15.V.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy (1, AFC); Keswick Ridge, 45.9962°N, 66.8781°W, 22.V-4.VI.2014, C. Alderson & V. Webster // Hardwood forest, Lindgren funnel trap (1, AFC).

Distribution in Canada and Alaska. MB, ON, QC, **NB** (Bousquet et al. 2013).

Comments. Many (21) specimens of *E. bipunctatus* were captured in Lindgren funnel traps in hardwood and mixed forests in NB; all but one in the canopy of trees. Most specimens were collected from traps in the canopy of quaking aspen, *Populus tremuloides* Michx. and large-toothed aspen, *P. grandidentata* Michx.

Ellescus ephippiatus (Say, 1832)

Material examined. New Brunswick, Sunbury Co., Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 4.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (1, RWC).

Distribution in Canada and Alaska. YT, BC, AB, SK, MB, ON, QC, NB (Bousquet et al. 2013).

Tribe Mecinini Gistel, 1848

Mecinus janthinus (Germar, 1821)†

Material examined. New Brunswick, Queens Co., Grand Lake Meadows P.N.A., off Rt. 105, 45.8461°N, 66.2061°W, 12.VI.2014, R.P. Webster // Old field near floodplain forest, sweeping (1, NBM). **Sunbury Co.**, Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 4.VI.2014, 9.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (2, AFC; 2, NBM; 10, RWC). **York Co.**, Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 3-15.V.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel trap 1 m high under *Q. rubra* (1, RWC).

Distribution in Canada and Alaska. BC, AB QC, **NB**, NS (Bousquet et al. 2013).

Comments. This species was introduced into North America for the control of yellow and Dalmatian toadflax, *Linaria vulgaris* (L.) Mill. and *Linaria dalmatica* (L.) Mill. (Scrophulariaceae) (Jeanneret and Schroeder 1992).

Tribe Otidocephalini Lacordaire, 1863

***Myrmex chevrolatii* (Horn, 1873)**

Material examined. New Brunswick, York Co., Douglas, Currie Mountain, 45.9832°N, 66.7564°W, 24.VI-9.VII.2013, C. Alderson & V. Webster // Old *Pinus strobus* stand, Lindgren funnel traps in canopy of *P. strobus* (1, AFC; 1, RWC); Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 24.VI-9.VII.2013, 9-24.VII.2013, 24.VII-7.VIII.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy of *Q. rubra* (7, AFC; 1, NBM; 10, RWC).

Distribution in Canada and Alaska. ON, QC, **NB** (Bousquet et al. 2013).

Comments. All (20) specimens of *Myrmex chevrolati* (Horn) were captured in Lindgren funnel traps in the canopy of trees (mostly in red oak (*Quercus rubra* L.)), none in traps in the understory. Adults in the Canadian Museum of Nature collection from TX have been associated with *Smilax* (Smilacaceae) vines.

Tribe Rhamphini Rafinesque, 1815

***Orchestes alni* (Linnaeus, 1758)†**

Material examined. Nova Scotia, Halifax Co., Magazine Hill, 44.4285°N, 63.3798°W, 14.V.2015, K. Van Rooyen & M. Luco // DND2 Black 2, monochamol lure, High trap – 4 funnel Lindgren (1, AFC).

Distribution in Canada and Alaska. BC, ON, QC, **NS** (Bousquet et al. 2013). This adventive European species, associated with *Ulmus*, was first reported from western North America by Anderson et al. (2007) and has since become widespread (Looney et al. 2012, Douglas et al. 2013). The above record is the first report of this species from the Maritime Provinces.

Subfamily Baridinae Schönherr, 1836
Tribe Madarini Jekel, 1865
Subtribe Madarina Jekel, 1865

***Madarellus undulatus* (Say, 1824)**

Material examined. New Brunswick, Kent Co., Kouchibouguac National Park, 46.8072°N, 64.9100°W, 12-24.VI.2015, C. Alderson & V. Webster // Jackpine forest, Lindgren funnel trap, 1 m high (1, RWC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 19.V-3.VI.2015, 3-18.VI.2015, C. Alderson & V. Webster // Hardwood forest, black Lindgren funnel traps 1 m high (4), green Lindgren funnel trap 1 m high (1) (5, RWC).

Distribution in Canada and Alaska. ON, QC, **NB**, NS (Bousquet et al. 2013).

Comments. All specimens of this species were captured in Lindgren funnel traps. The species is associated with wild grape, *Vitis* and Virginia creeper, *Parthenocissus* (both Vitaceae) (Blatchley and Leng 1916).

Subfamily Ceutorhynchinae Gistel, 1848
Tribe Ceutorhynchini Gistel, 1848

Microplontus campestris (Gyllenhal, 1837)†

Material examined. New Brunswick, Westmorland Co., Rt. 15 at exit 53, 45.2079°N, 64.3085°W, 17.VI.2014, M.-A. Giguère & R.P. Webster // Roadside, sweeping (2, RWC).

Distribution in Canada and Alaska. ON, QC, **NB** (Bousquet et al. 2013).

Comments. This species is associated with *Chrysanthemum leucanthemum* L. (Asteraceae) (Anderson 2002).

Tribe Mononychini LeConte, 1876

Mononychus vulpeculus (Fabricius, 1801)

Comments. Bousquet et al. (2013) did not not include *Mononychus vulpeculus* (Fabricius) as occurring in NB in their checklist. Majka et al. (2007) reported this species from several sites in the province, where it is often found on *Iris versicolor* L. This species should therefore be included on the faunal list of NB.

Tribe Phytobiini Gistel, 1848

Pelenomus waltoni (Boheman, 1843)†

Material examined. New Brunswick, Gloucester Co., Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 13-28.V.2015, C. Alderson & V. Webster // Mixed forest, black Lindgren funnel trap in canopy (1, RWC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 19.V-3.VI.2015, 3-18.VI.2015, C. Alderson & V. Webster // Hardwood forest, black Lindgren funnel traps 1 m high under trees (2), green Lindgren funnel traps 1 m high under trees (3), purple Lindgren funnel trap 1 m high under trees (1), (1, CMNC; 5, RWC).

Distribution in Canada and Alaska. ON, QC, **NB** (Bousquet et al. 2013).

Comments. All specimens of this adventive species were captured in Lindgren funnel traps. In Europe, this species has been associated with *Polygonum hydropiper* L.

and *P. mite* Schrank (Polygonaceae) (Anderson and Korotyaev 2004); host associations in North America are likely also with *Polygonum* species.

Rhinoncus bruchoides (Herbst, 1784)†

Material examined. New Brunswick, Carleton Co., Wilmot, Two Mile Brook Fen, Wakefield, 46.3594°N, 67.6800°W, 2.VI.2005, R.P. Webster, coll. // On trail through cedar swamp, in flight in late afternoon (1, NBM); Meduxnekeag Valley Nature Preserve, 46.1890°N, 67.6766°W, 4.VII.2005, M.-A. Giguère & R.P. Webster, coll. // Flood plain forest, with butternut, sweeping (1, RWC); Florenceville, 46.4613°N, 67.6239°W, 16.VI.2010, M.-A. Giguère // Potato field, yellow pan trap (1, RWC). **Queens Co.**, W. of Jemseg at "Trout Creek", 45.8237°N, 66.1225°W, 6.IX.2007, R.P. Webster, coll. // Silver maple swamp, sweeping foliage, along margin of marsh (1, RWC). **Restigouche Co.**, Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 29.V-10.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel trap in canopy of *P. balsamifera* (1, RWC). **Sunbury Co.**, Gilbert Island, 45.8770°N, 66.2954°W, 18-28.V.2012, 28.V-12.VI.2012, C. Alderson, C. Hughes, & V. Webster // hardwood forest, Lindgren funnel traps in canopy of *Juglans cinerea,* & 1 m high under *Juglans cinerea* (2, RWC). **York Co.**, Lincoln, Agriculture Canada Exp. Farm, 13.VI.2012, M.-A. Giguère // Potato field, yellow pan trap (1, RWC).

Distribution in Canada and Alaska. QC, **NB**, NS (Bousquet et al. 2013).

Comments. *Rhinoncus bruchoides* (Herbst) has been associated with a number of species of *Polygonum* (Polygonaceae) (Hoebeke and Whitehead 1980).

Rhinoncus perpendicularis (Reich, 1797)†

Material examined. New Brunswick, Queens Co., Grand Lake Meadows P.N.A. at Rt. 105, 45.8461°N, 66.2061°W, 22.VI.2014, R.P. Webster // Old field near flood plain forest, sweeping (1, CMNC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 22.V-4.VI.2014, C. Alderson & V. Webster // Field/meadow, Lindgren funnel trap (1, RWC).

Distribution in Canada and Alaska. ON, QC, **NB** (Bousquet et al. 2013).

Comments. In ON, this species has been associated with *Polygonum hydropiper* L. (Polygonaceae) (Anderson and Korotyaev 2004).

Rhinoncus pericaripius (Linnaeus 1758)† and *Rhinoncus castor* (Fabricius 1792)†

The names for these two species of *Rhinoncus* (both recorded from NB) have recently been changed based on examination of type specimens (Huang and Colonnelli 2014). The spe-

cies formerly known as *Rhinoncus castor* (Fabricius 1792) is now known as *Rhinoncus pericarpius* (Linnaeus 1758). Following this change, the species formerly known as *Rhinoncus pericarpius* (Linnaeus 1758) is now known as *Rhinoncus leucostigma* (Marsham 1802).

Subfamily Cossoninae Schönherr, 1825
Tribe Cossonini Schönherr, 1825

***Cossonus impressifrons* Boheman, 1838**

Material examined. New Brunswick, Restigouche Co., Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 29.V-10.VI.2014, 10-25.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps 1 m high under trees (8) in canopy of *P. balsamifera* (3) (3, AFC; 8, RWC); ca. 3 km SE of Simpsons Field, 47.5277°N, 66.5142°W, 25.VI-10.VII.2015, 10-23.VII.2015, C. Alderson & V. Webster // Old cedar & spruce forest with *Populus balsamifera* & *P. tremuloides*, Lindgren funnel traps in canopy of *P. balsamifera* (1, AFC; 3, RWC).

Distribution in Canada and Alaska. ON, QC, **NB** (Bousquet et al. 2013).

Comments. All individuals of *Cossonus impressifrons* Boheman were captured in Lindgren funnel traps in areas with *Populus balsamifera*, either under these trees or in the canopy.

***Cossonus pacificus* Van Dyke, 1916**

Material examined. New Brunswick, Northumberland Co., ca. 1.5 km NW of Sevogle, 47.0939°N, 65.8387°W, 11-26.VI.2013, 26.VI-8.VII.2013, C. Alderson & V. Webster // *Populus tremuloides* stand with a few conifers, Lindgren funnel traps in canopy of *P. tremuloides* (2, RWC).

Distribution in Canada and Alaska. BC, AB, SK, **NB** (Bousquet et al. 2013). This is the first eastern record of this species. Previously, it was known as far east as SK but is probably more widespread.

Tribe Rhyncolini Gistel, 1848
Subtribe Rhyncolina Gistel, 1848

***Rhyncolus knowltoni* (Thatcher, 1940)**

Material examined. Charlotte Co., St. Andrews, 45.0741°N, 67.0383°W, 22.VII.2012, R.P. Webster // Barrier beach (gravel), under large log (1, CMNC; 1, RWC).

Distribution in Canada and Alaska. AB, SK, MB, **NB** (Bousquet et al. 2013). This is the first eastern record of this species. Previously, it was known from MB with

additional records added from AB and SK by Douglas et al. (2013). *Rhyncolus knowltoni* (Thatcher) is associated with *Populus tremuloides* (Douglas et al. (2013) and is undoubtedly more widespread than the records indicate.

Subfamily Cryptorhynchinae Schönherr, 1825
Tribe Cryptorhynchini Schönherr, 1825
Subtribe Cryptorhynchina Schönherr, 1825

***Eubulus bisignatus* (Say, 1832)**

Material examined. New Brunswick, Northumberland Co., ca. 1.5 km NW of Sevogle, 47.0939°N, 65.8387°W, 11-26.VI.2013, C. Alderson & V. Webster // *Populus tremuloides* stand with a few conifers, Lindgren funnel trap in canopy of *P. tremuloides* (1, RWC). **Queens Co.**, C.F.B. Gagetown, 45.7516°N, 66.1866°W, 4-17.VI.2013, 17.VI-3.VII.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy of *Populus grandifolia* (1, AFC; 3, RWC). **Sunbury Co.**, Gilbert Island, 45.8770°N, 66.2954°W, 20.VI-5.VII.2013, C. Alderson, C. Hughes, & V. Webster // hardwood forest, Lindgren funnel traps in canopy of *Populus tremuloides* (2, RWC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 4-19.VI.2014, 19.VI-3.VII.2014, 3-18.VII.2014, C. Alderson & V. Webster // Mixed forest, Lindgren funnel traps in canopy (2, AFC; 1, NBM; 5, RWC); Fredericton, Odell Park, 45.9508°N, 66.6723°W, 1-19.V.2015, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy *Populus tremuloides* (1, AFC).

Distribution in Canada and Alaska. ON, QC, **NB** (Bousquet et al. 2013).

Comments. All 16 specimens of *Eubulus bisignatus* (Say) were captured in Lindgren funnel traps in the canopy of either *Populus tremuloides* or *P. grandifolia*; none in traps in the understory. The species is most often collected in light traps and has been associated with a variety of hardwood trees (Anderson 2008).

Subfamily Entiminae Schönherr, 1823
Tribe Polydrusini Schönherr, 1823

***Polydrusus cervinus* (Linnaeus, 1758)†**

Material examined. New Brunswick, Kent Co., Kouchibouguac National Park, 46.8072°N, 64.9100°W, 27.V-12.VI.2015, C. Alderson & V. Webster // Jackpine forest, Lindgren funnel trap, 1 m high (1, AFC). **Gloucester Co.**, Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 9-23.VII.2015, 5-21.VIII.2015, C. Alderson & V. Webster // Mixed forest, purple Lindgren funnel traps 1 m high (2, AFC). **Queens Co.**, Rt. 690 near Flowers Cove, 46.0367°N, 66.0376°W, 16.VI.2013, 20.VI.2013, M. Giguère & R. Webster // Roadside near stand of *Robinia pseudoacacia*, beating *Robinia*

foliage (1, AFC; 1, RWC); C.F.B. Gagetown, 45.7516°N, 66.1866°W, 4-17.VI.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy of *Q. rubra* (1, AFC). **Sunbury Co.**, 9.5 km NE jct. 101 & 645, 45.7586°N, 66.6755°W, 2.VII.2008, R.P. Webster // Old field with open sandy areas, on *Salix* sp. (2, RWC). **York Co.**, Charters Settlement, 45.8286°N, 66.7365°W, 8.VII.2005, R.P. Webster // Mixed forest, on foliage of *Salix* sp. (1, RWC); Charters Settlement, 45.8430°N, 66.7275°W, 11.VII.2005, R.P. Webster // Regenerating forest, beating foliage (1, RWC); same locality data, collector, and forest type but 12.VII.2005 // On foliage of *Salix* sp. (1, RWC); same locality data and collector but 21.VI.2008 // Regenerating forest, brushy opening, sweeping foliage (1 RWC); Fredericton, 45.9154°N, 66.6687°W, 30.V.2010, R.P. Webster // Roadside, on *Salix* sp. (2, RWC); Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 10-24.VI.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel trap in canopy of *Q. rubra* (1), 1 m high under *Q. rubra* (1, AFC; 1, RWC); same locality and collectors but 45.9832°N, 66.7564°W, 27.V-10.VI.2013, 24.VI-9.VII.2013 // Old *Pinus strobus* stand, Lindgren funnel trap in canopy of *P. strobus* (2, AFC); Fredericton, Odell Park, 45.9539°N, 66.6666°W, 10-24.VI.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy (2, AFC); Keswick Ridge, 45.9962°N, 66.8781°W, 19.VI-3.VII.2014, C. Alderson & V. Webster // Mixed forest, Lindgren funnel trap 1 m high under trees (1, AFC).

Distribution in Canada and Alaska. QC, **NB,** NS, PE (Bousquet et al. 2013).

Comments. This adventive Palaearctic species is widespread in NB. A few adults were found on *Salix* foliage, but most NB specimens were captured in Lindgren funnel traps in various forest types.

Polydrusus impressifrons Gyllenhal, 1834†

Comments. *Polydrusus impressifrons* Gyllenhal was newly reported from NB by Majka et al. (2007), based on records from Charters Settlement and Moncton (in the University of Moncton Insect Collection). The specimens from Charters Settlement were misidentified and are *Polydrusus cervinus* (Linnaeus); however, the specimen from Moncton was correctly determined and is *P. impressifrons*, and the species remains on the provincial list.

Subfamily Mesoptiliinae Lacordaire, 1863
Tribe Magdalidini Pascoe, 1870

Magdalis piceae Buchanan, 1934

Material examined. New Brunswick, Northumberland Co., Upper Graham Plains, 47.1001°N, 66.8154°W, 9-24.VII.2014, C. Alderson & V. Webster // Old black

spruce forest, Lindgren funnel trap (2, RWC). **Sunbury Co.**, Acadia Research Forest, 45.9866°N, 66.3841°W, 4-11.VIII.2009, R. Webster & M.-A. Giguère, coll. // Red spruce forest with red maple & balsam fir, Lindgren funnel trap (1, RWC). **York Co.,** 16 km W of Tracy off Rt. 645, 45.6854°N, 66.8839°W, 11-25.VII.2014, C. Alderson & V. Webster // Old red pine forest, Lindgren funnel trap (1, RWC); Fredericton, Odell Park, 45.9508°N, 66.6723°W, 29.VI-14.VII.2015, 25.VIII-9.IX.2015, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel traps in canopy (3), 1 m high under trees (1) (1, CMNC; 3, RWC).

Distribution in Canada and Alaska. ON, QC, **NB**, NS, PE (Bousquet et al. 2013).

Comments. All specimens of this species were captured in Lindgren funnel traps. This species was found in an old black spruce (*Picea mariana* (Mill.) B.S.P.) forest, a red spruce (*Picea rubens* Sarg.) forest with red maple (*Acer rubrum* L.) and balsam fir (*Abies balsamea* (L.) Mill.), an old red pine forest, and in a hardwood stand with spruce nearby.

Subfamily Scolytinae Latreille, 1804
Tribe Cryphalini Lindemann, 1877

Procryphalus mucronatus (LeConte, 1879)

Material examined. New Brunswick, Carleton Co., Meduxnekeag Valley Nature Preserve, 46.1907°N, 67.6740°W, 7-21.VI.2012, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of *Populus tremuloides* (6) and 1 m high under *Populus tremuloides* (1) (7, RWC). **Kent Co.**, Kouchibouguac National Park, 46.8087°N, 64.9078°W, 27.V-12.VI.2015, C. Alderson & V. Webster // Poplar/red maple stand, Lindgren funnel trap, 1 m high (1, AFC). **Restigouche Co.**, ca. 3 km SE of Simpsons Field, 47.5277°N, 66.5142°W, 25.VI-10.VII.2015, C. Alderson & V. Webster // Old cedar & spruce forest with *Populus balsamifera* & *P. tremuloides*, Lindgren funnel trap in canopy of *P. balsamifera* (1, RWC). **Sunbury Co.**, Gilbert Island, 45.8770°N, 66.2954°W, 18-28.V.2012, 28.V-12.VI.2012, 23.V-6.VI.2013, C. Alderson, C. Hughes, & V. Webster // hardwood forest, Lindgren funnel traps in canopy of *Populus tremuloides* (3, AFC; 3, RWC).

Distribution in Canada and Alaska. AK, BC, AB, **NB** (Bousquet et al. 2013). These are the first records of this species from eastern Canada.

Comments. Most (13 of the 15 specimens) were captured in Lindgren funnel traps in the canopy of *Populus tremuloides* (12) and *P. balsamifera* (1); the other two individuals were captured in traps under *P. tremuloides* and in a stand with this tree species present. *Populus tremuloides* is the host of this beetle (Bright 1976). Bright suggested that the record of *Procryphalus utahensis* Hopkins from QC might be a misidentification of *P. mucronatus* (Bright, personal communication).

Tribe Ipini Bedel, 1888

Ips grandicollis (Eichhoff, 1868)

Material examined. New Brunswick, Gloucester Co., Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 28.V-15.VI.2015, 15-25.VI.2015, 5-21.VIII.2015, C. Alderson & V. Webster // Mixed forest, purple Lindgren funnel traps in canopy of white pine (4, AFC). **Kent Co.**, Kouchibouguac National Park, 46.8072°N, 64.9100°W, 12-24.VI.2015, 4-20.VIII.2015, C. Alderson & V. Webster // Jackpine forest, Lindgren funnel traps, 1 m high (2, AFC). **Northumberland Co.**, ca, 2.5 km W of Sevogle, 47.0876°N, 65.8613°W, 1-14.V.2014, 28.V.-11.VI.2013, 26.VI-8.VII.2013, C. Alderson & V. Webster // Old *Pinus banksiana* stand, Lindgren funnel traps (5, AFC; 2, RWC); Upper Graham Plains, 47.1001°N, 66.8154°W, 4-18.IX.2014, C. Alderson & V. Webster // Old black spruce forest, Lindgren funnel trap (1, AFC). **Queens Co.**, C.F.B. Gagetown, 45.7516°N, 66.1866°W, 20.V-4.VI.2015, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy (3, AFC). **Restigouche Co.**, Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 29.V-10.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel trap in canopy of *P. balsamifera* (1, NBM). **Sunbury Co.**, Acadia Research Forest, 45.9990°N, 66.2623°W, 113-26.VI.2012, C. Alderson & V. Webster // Mature balsam fir forest with scattered red spruce & red maple, Lindgren funnel trap (1, RWC). **York Co.**, Douglas, Currie Mountain, 45.9832°N, 66.7564°W, 10-24.VI.2013, 24.VI-9.VII.2013, 24.VII-7.VIII.2013, 7-19.VIII.2013, C. Alderson & V. Webster // Old *Pinus strobus* stand, Lindgren funnel traps in canopy of *P. strobus* (13, AFC; 1, NBM; 8, RWC); 16 km W of Tracy off Rt. 645, 45.6854°N, 66.8839°W, 14-26.V.2014, 26.V-9.VI.2014, 23.VI-11.VII.2014, 11-25.VII.2014, C. Alderson & V. Webster // Old red pine forest, Lindgren funnel traps in canopy of red pine (9), 1 m high under trees (1) (8, AFC; 2, NBM); Fredericton, Odell Park, 45.9484°N, 66.6802°W, 22.V-4.VI.2014, 17.VI-3.VII.2014, 17.VII-1.VIII.2014, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of conifer (2, AFC; 1, NBM).

Distribution in Canada and Alaska. MB, ON, QC, **NB,** NS (Bousquet et al. 2013).

Comments. Most (42 of 54) specimens of *Ips grandicollis* (Eichhoff) were captured in Lindgren funnel traps in the canopy of trees (many other individuals were not vouchered). Specimens were captured in the canopy of eastern white pine (26), balsam fir (1), and red pine (9). The other individuals were captured in stands with white pine and jack pine present. White pine was the only pine present at the Bathurst and Currie Mountain sites, indicating that white pine may be a host for *I. grandicollis* in NB.

Tribe Xyleborini LeConte, 1876

Xyleborinus attenuatus (Blandford, 1894)†

Material examined. New Brunswick, Gloucester Co., Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 13-28.V.2015, 28.V-15.VI.2015, 25.VI-9.VII.2015, C. Alderson & V. Webster // Mixed forest, black Lindgren funnel traps in canopy (2), 1 m high under trees (1) (3, AFC). **Queens Co.**, C.F.B. Gagetown, 45.7516°N, 66.1866°W, 22.V-4.VI.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel trap in canopy of *Q. rubra* (1, RWC). **Restigouche Co.**, Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 15-29.V.2014, 29.V-10.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps in canopy of *P. balsamifera* (1, AFC; 1, NBM). **York Co.**, Douglas, Currie Mountain, 45.9832°N, 66.7564°W, 3-15.V.2013, C. Alderson & V. Webster // Old *Pinus strobus* stand, Lindgren funnel traps in canopy of *P. strobus* (3, RWC); Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 3-15.V.2013, 15-27.V.2013, 27.V-10.VI.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel traps 1 m high under *Q. rubra* (5, RWC); Fredericton, Odell Park, 45.9539°N, 66.6666°W, 2-15.V.2013, 27.V-10.VI.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel traps in canopy (2, RWC); same locality but 45.9484°N, 66.6802°W, 12-22.V.2014, 22.V-4.VI.2014, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of conifer (3), in canopy of hardwood (2), 1 m high under trees (5) (10, AFC); 16 km W of Tracy off Rt. 645, 45.6854°N, 66.8839°W, 14-26.V.2014, 26.V-9.VI.2014, 23.VI-11.VII.2014, 11-25.VII.2014, C. Alderson & V. Webster // Old red pine forest, Lindgren funnel traps in canopy of red pine (2), 1 m high under trees (2) (2, AFC; 2, NBM); Keswick Ridge, 45.9962°N, 66.8781°W, 6-22.V.2014, C. Alderson & V. Webster // Mixed forest, Lindgren funnel trap 1 m high under trees (1, AFC); Canterbury, Eel River P.N.A., 45.8966°N, 67.6345°W, 8-21.V.2014, C. Alderson & V. Webster // Old-growth eastern white cedar swamp & fen, Lindgren funnel traps (1, AFC; 1, NBM).

Distribution in Canada and Alaska. BC, ON, QC, **NB**, NS, PE (Bousquet et al. 2013).

Comments. The adventive *Xyleborinus attenuatus* (Blandford) was first reported from North America by Mudge et al. (2001) from the northwestern USA, followed by reports from BC, the northeastern USA, PE, NS, and QC (Douglas et al. 2013). This species is now widespread and locally abundant in NB (numerous individuals captured in Lindgren funnel traps at Odell Park during 2014 and 2015; only a few were vouchered). All specimens from NB were captured in Lindgren funnel traps, about half in the canopy of trees.

Acknowledgments

We thank Caroline Simpson for editing this manuscript and Benoit Godin for reviewing it. Donald Bright, Jr. is thanked for determining *Procryphalus mucronatus*. Gaétan Moreau is thanked for loaning the specimen of *Polydrusus impressifrons* in the University of Moncton Insect Collection. Marie-Andrée Giguère, Colin MacKay, and Michelle Roy are thanked for technical assistance and collecting specimens. We thank Natural Resources Canada, Canadian Forest Service, the Canadian Food Inspection Agency, and the USDA APHIS for funding the study on early detection of invasive Cerambycidae, which provided specimens from Lindgren funnel traps. We thank the New Brunswick Wildlife Trust Fund for funding part of this project and George Peabody and the Meduxnekeag River Association for permission to sample beetles at the Meduxnekeag Valley Nature Preserve (which includes the Bell Forest). We thank Scott Makepeace (New Brunswick Department of Natural Resources, Fish and Wildlife Branch) for assistance locating sites. Deanna McCullum (Canadian Forces Base Gagetown, Department of National Defense) is thanked for permission to sample on DND land near Gagetown, NB. Eric Tremblay and Parks Canada are thanked for issuing a permit to sample beetles in the Kouchibouguac National Park, and Janet Doucet and the City of Bathurst are thanked for permission to sample at the Daly Point Nature Preserve. The New Brunswick Department of Natural Resources, Fish and Wildlife Branch is thanked for issuing permits for sampling in the Protected Natural Areas.

References

Anderson RS (2002) Family 131. Curculionidae Latreille 1802. In: Arnett RH Jr, Thomas MC, Skelley PE, Frank JH (Eds) American Beetles. Volume 2. Polyphaga: Scarabaeoidea through Curculionidea. CRC Press, Boca Raton, Florida, 722–815.

Anderson RS (2003) *Pseudotychius watsoni* Blatchley (Curculionoidea: Nanophyidae) new to Canada. The Coleopterists Bulletin 57: 110–122. doi: 10.1649/0010-65X(2003)057[0110:SN]2.0.CO;2

Anderson RS (2008) A review of the genus *Eubulus* Kirsch 1869 of North America (Curculionidae; Cryptorhynchinae). The Coleopterists Bulletin 62: 287–296. doi: 10.1649/1064.1

Anderson RS, O'Brien CW, Salsbury GA, Krauth SJ (2007) *Orchestes alni* (L.) newly discovered in North America (Coleoptera: Curculionidae). Journal of the Kansas Entomologcal Society 80: 78–79. doi: 10.2317/0022-8567(2007)80[78:OALNDI]2.0.CO;2

Anderson RS, Korotyacv BA (2004) Some Palearctic weevils in the subfamily Ceutorhynchinae (Coleoptera, Curculionidae) recently discovered in North America. The Canadian Entomologist 136: 233–239. doi: 10.4039/n03-064

Blatchley WS, Leng CW (1916) Rhynchophora or weevils of north eastern America. The Nature Publishing Company, Indianapolis, 682 pp. doi: 10.5962/bhl.title.1557

Bouchard P, Bousquet Y, Davies AE, Alonso-Zarazaga MA, Lawrence JF, Lyal CHC, Newton AF, Ried CAM, Schmitt M, Ślipiński SA, Smith ABT (2011) Family-group names in Coleoptera (Insecta). ZooKeys 88: 1–972. doi: 10.3897/zookeys.88.807

Bousquet Y, Bouchard P, Davies AE, Sikes D (2013) Checklist of beetles (Coleoptera) of Canada and Alaska. Pensoft Series Faunistica No. 109, Sofia-Moscow, 402 pp.

Bright DE (1976) The Bark Beetles of Canada and Alaska. Coleoptera: Scolytidae. The insects and arachnids of Canada. Part 2. Agriculture Canada, Ottawa, 241 pp.

Clark WE, Burke HR (2005) Revision of the subgenus *Cnemocyllus* Dietz of the weevil genus *Anthonomus* Germar (Coleoptera: Curculionidae, Anthonomini). Insecta Mundi 19: 1–54.

Cognato AI, Cuerrier A, Ampong-Nyarko K, Hermanutz L, Mardones V (2015) The occurrence of *Dryocoetes krivolutzkajae* (Coleoptera: Curculionidae: Scolytine) in Canada: a potential pest of cultivated roseroot (Crassulaceae). The Canadian Entomologist 147: 741–743. doi: 10.4039/tce.2015.14

Douglas H, Bouchard P, Anderson RS, de Tonnancour P, Vigneault R, Webster RP (2013) New Curculionoidea (Coleoptera) records for Canada. ZooKeys 309: 13–48. doi: 10.3897/zookeys.309.4667

Hinds HR (2000) The Flora of New Brunswick, 2nd Edition, A Manual for Identification of the Vascular Plants of New Brunswick. Biology Department, University of New Brunswick, Fredericton, 698 pp.

Hoebeke ER, Whitehead DR (1980) New records of *Rhinocus bruchoides* (Herbst) for the Western Hemisphere and a revised key to the North American species of the genus *Rhinoncus* (Coleoptera: Curculionidae: Ceutorhynchinae). Proceedings of the Entomological Society of Washington 82: 556–561.

Huang J, Colonnelli E (2014) On the true identity of *Curculio pericarpius* Linnaeus, 1758 (Coleoptera : Curculionidae). Fragmenta Entomologica 46(1-2): 117–120.

Hughes CC, Johns RC, Sweeney JD (2014) A technical guide to installing beetle traps in the upper crown of trees. Journal of the Acadian Entomological Society 10: 12–18. doi: 10.4081/fe.2014.74

Jeanneret P, Schroeder D (1992) Biology and host specificity of *Mecinus janthinus* Germar (Col.: Curculionidae), a candidate for the biological control of yellow and Dalmatian toadflax, *Linaria vulgaris* (L.) Mill. and *Linaria dalmatica* (L.) Mill. (Scrophulariaceae), in North America. Biocontrol Science and Technology 2: 25–34. doi: 10.1080/09583159209355214

Lindgren BS (1983) A multiple funnel trap for scolytid beetles (Coleoptera). The Canadian Entomologist 115: 299–302. doi: 10.4039/Ent115299-3

Looney CL, Humble M, Cranshaw W (2012) *Orchestes alni* (L.) (Coleoptera: Curculionidae): new records from western North America with notes on parasitoids. The Coleopterists Bulletin 66: 63–66. doi: 10.1649/072.066.0115

Majka CG, Anderson RS, McAlpine DF, Webster RP (2007) The weevils (Coleoptera: Curculionoidea) of the Maritime Provinces of Canada, 1: New records from New Brunswick. The Canadian Entomologist 139: 378–396. doi: 10.4039/n06-008

Mudge AD, LaBonte JR, Johnson KJR, LaGasa EH (2001) Exotic woodboring Coleoptera (Micromalthidae, Scolytidae) and Hymenoptera (Xiphydriidae) new to Oregon and Washington. Proceedings of the Entomological Society of Washington 103: 1011–1019.

O'Brien CW (1970) A taxonomic revision of the weevil genus *Dorytomus* in North America (Coleoptera: Curculionidae). University of California Publications in Entomoloy 60: 1–80.

Valentine BD (1998) A review of Nearctic and some related Anthribidae (Coleoptera). Insecta Mundi 12: 251–296.

Webster RP, Anderson RS, Sweeney JD, DeMerchant I (2012) New Coleoptera records from New Brunswick, Canada: Anthribidae, Brentidae, Dryophthoridae, Brachyceridae, and Curculionidae. In: Anderson R, Klimaszewski J (Eds) Biodiversity and Ecology of the Coleoptera of New Brunswick, Canada. ZooKeys 179: 349–406. doi: 10.3897/zookeys.179.2626